

### **REMARKS**

Claims 1-40 are currently pending in the subject application and are presently under consideration. Claims 1, 18, 24, 29, 33 and 35-40 have been amended as shown at pages 2-12 of the Reply. Claims 41-48 are newly presented as shown on pp. 12 of the Reply.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

#### **I. Rejection of Claims 1-23, 35 and 38 Under 35 U.S.C. §112**

Claims 1-23, 35 and 38 stand rejected under 35 U.S.C. §112 for alleged indefiniteness. Particularly, the Office Action dated February 25, 2009 asserts that the phrase “multi-dimensional software objects” is unclear in scope. This rejection should be withdrawn for at least the following reasons. The subject claims have been amended to overcome this rejection, and the Application provides sufficient recitation of these features to enable practice of the subject claims.

The subject application and related claims pertain, in part, to facilitating display and control across a variety of platforms. Some platforms may have different capabilities than others. Accordingly, certain contexts may favor a two-dimensional view, while others may utilize a richer three-dimensional view. *See e.g.* Detailed Description, page 12, lines 16-19. While the particular embodiment discussed relates to two- and three-dimensional displays, the concept of a multi-dimensional display is implied by and inherent to this embodiment. For example, if a system employs both two- and three-dimensional objects simultaneously (*See e.g.* Detailed Description, page 12, lines 26-27), it is appropriately said to display multi-dimensional objects. Alternatively, the system employs an object characterized by two or more dimensions (*See e.g.* Detailed Description, page 12, lines 16-19), it is also proper to state that the system employs multi-dimensional objects. Both cases are properly embraced and supported by the discussion in the specification.

The Office Action dated February 25, 2009 notes that the multi-dimensional objects are what is rendered, rather than what performs the rendering. To clarify these aspects, claims 1, 18, 35 and 38 have been amended.

In addition, claims 29-34 stand rejected for alleged failure to comply with the enablement requirement. Particularly, claim language relating to “multi-dimensional object structure” and

“multi-level hierarchical attributes” are identified as lacking recitation in the Application. However, as discussed *supra*, these features represent inherent, if not explicit, aspects of the disclosed embodiments. The specification discloses the use of nested data structures to represent, for example, process points in a control architecture. *See e.g.* Detailed Description, page 17, lines 2-5. These process points can be associated with and represented by multiple-dimension software objects. *See e.g.* Detailed Description, page 17, lines 5-10. Therefore, a “multi-dimensional object structure” is enabled by the specification. Likewise, the Application discusses the use of a “drill down” feature, allowing users to increase the level of detail or zoom to particular points in an enterprise. Introducing this aspect, this technique of employing variable levels of granularity is described as allowing a user to “navigate through the factory hierarchy.” *See e.g.* Summary, page 3, line 26 to page 4, line 7. Accordingly, this terminology is supported in the Application and believed by Applicants to be readily understood by those of ordinary skill in the art.

## **II. Rejection of Claims 1-40 Under 35 U.S.C. §101**

Claims 1-40 stand rejected under 35 U.S.C. §101 for being directed toward non-statutory subject matter. Specifically, the Office Action asserts both the systems and methods of the rejected claims comprise software *per se*. This rejection should be withdrawn for at least the following reason. Independent claims 1, 18, 24, 29, 33 and 35-40 have been amended to overcome this rejection. In particular, these claims have been amended to recite either *employing a processor executing computer executable instructions stored on a computer readable storage medium; or a processor; [and] a memory communicatively coupled to the processor, the memory having stored therein computer-executable instructions configured to implement the system.* Accordingly, withdraw of rejection of independent claims 1, 18, 24, 29, 33 and 35-40 (and all claims that depend therefrom) is respectfully requested.

## **III. Rejection of Claims 24, 36-37 and 39-40 Under 35 U.S.C. §103(a)**

Claims 24, 36-37 and 39-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wolff *et al.* (U.S. Patent No. 2003/0120714). Withdrawal of the rejection is respectfully requested for at least the following reasons. Wolff *et al.* fails to suggest all the features of independent claims 24, 36-37 and 39-40.

The subject application relates to services for providing flexible and powerful Human Machine Interfaces (HMIs) for industrial control systems. These HMIs are flexible in that they overcome the limitations of discrete legacy systems which may lack compatibility among one another in part or whole. Services are provided to utilize available hardware and content to auto-generate compatible code. The standard inputs of each system can be employed to render substantially similar HMIs on otherwise disparate platforms. Rendering can reach a level of detail that emulates the physical controls common to a system (e.g. dials, gauges, sliders). The rendering can also, for example, display system changes as they occur. A further feature provides for what is termed a “view anywhere” service, which includes multi-dimensional objects that allow a facility to be navigated both in terms of a plurality of distinct systems (or even facilities) as well as various hierarchical levels within single systems. This allows a user to view a system or plurality of systems at an optimal resolution for specific purposes. The HMIs rendered in conjunction with these management aspects provide users appropriate power coincident with the capabilities of both the controls and the systems being controlled. The resultant data can be administered automatically or by the user to provide feedback in an optimal format for the desired purposes.

Claim 24 recites, in part: *converting 3-dimensional data into 2-dimensional data or vice versa based at least in part on properties, limitations, software plug-ins of the device, or any combination thereof; [...] displaying an error message on one or more of the plurality of devices that cannot properly render the plurality of disparate views; and presenting views associated with a corresponding zoom level.* Wolff *et al.* does not make obvious these and other features of the subject claims.

Wolff *et al.* relates to machine vision systems, and more particularly, to human machine interfaces (HMIs) for training, controlling, and monitoring machine vision system sensors and methods for installing and configuring such interfaces. The cited reference discloses receipt of data in a desired portable device compatible format and utilizing an image compression technique to enhance the detail of an image to an appropriate gray or contrast level. There is no suggestion in Wolff *et al.* of *converting 3-dimensional data into 2-dimensional data or vice versa based at least in part on properties, limitations, software plug-ins of the device, or any combination thereof*, as recited in claim 24. The Final Office Action dated February 25, 2009 asserts Wolff *et al.* discloses “a factor and scales the image based on the interface the image is

being presented on,” and therefore suggests multi-dimensional conversion. However, this reading is too broad. Nowhere does Wolff *et al.* discuss varying the number of dimensions an object is modeled in. Nor does Wolff *et al.* explicitly recite “scaling” of data for a device. At best, Wolff *et al.* relates to preparing data for display on a resident module usable on a variety of devices. Data preparation can include adjusting resolution and formatting for read speed. However, Wolff *et al.* is silent on, and fails to disclose or suggest *converting 3-dimensional data into 2-dimensional data or vice versa based at least in part on properties, limitations, software plug-ins of the device, or any combination thereof*, as recited in claim 24.

Nor does Wolff *et al.* suggest *presenting views associated with a corresponding zoom level*, as recited in claim 24. Zoom level is distinct from resolution. Higher resolution can facilitate more detailed zooming. Wolff *et al.* is concerned only with making a one-step resolution adjustment to enable more convenient use on a given device. To interpret this as *presenting views associated with a corresponding zoom level* is to read Wolff *et al.* too expansively. Finally, Wolff *et al.* fails to discuss *displaying an error message on one or more of the plurality of devices that cannot properly render the plurality of disparate views*. In the event that some or all of the data is impossible to display on a device, the device can at least receive a notification of this error. Wolff *et al.* does not include means for handling such situations. Accordingly, it is apparent that Wolff *et al.* does not disclose or suggest all claimed aspects, and therefore it is respectfully submitted that rejection of independent claim 24 (and all claims that depend therefrom) should be withdrawn.

Claims depending from independent claim 24 also contain novel distinctions over the cited reference. There is no implication that *presenting data associated with a zoom level chosen by the user; and suppressing data associated with the zoom level chosen by the user* (claim 26), *assigning the data or the zoom levels* (claim 27), *associating the zoom level and the data in a non-linear relationship* (claim 28) or *utilizing artificial intelligence to infer a default zoom level based on a user preference* (claim 29) are obvious in view of Wolff *et al.* Newly presented claims 41-44 depend from claim 24 and disclose additional features not suggested the reference document.

Claim 36 also recites features not made obvious by Wolff *et al.* Particularly, claim 36 recites *mapping data path information to data delivered to the physical device to enable communication between the data and a Human Machine Interface (HMI); [...] and creating one or more software objects that represent the Human Machine Interface (HMI) and the I/O interface with the physical device; wherein the Human Machine Interface (HMI) is associated with one or more disparate systems.* Wolff *et al.* fails to disclose these and other features of independent claim 36. In addition, claim 45 depends from claim 36, and also recites features not taught by Wolff *et al.* Specifically, claim 45 recites *drilling down on the one or more software objects to display at least one component associated with the one or more disparate systems.* In view of these novel and non-obvious features, rejection of claim 36 should be withdrawn.

As discussed above, Wolff *et al.* seeks to adjust data for appropriate use on lower-resolution platforms. In this regard, the cited reference does not contain any discussion of *mapping data path information to data delivered to the physical device to enable communication between the data and a Human Machine Interface (HMI).* Nor does Wolff *et al.* disclose *creating one or more software objects that represent the Human Machine Interface (HMI) and the I/O interface with the physical device; wherein the Human Machine Interface (HMI) is associated with one or more disparate systems* as employed by the subject claims. Wolff *et al.* merely reduces an existing object rather than creating or emulating new objects. Further, Wolff *et al.* does not suggest reducing dynamic or active content such as emulated controls. Rather, Wolff *et al.* only suggests reducing static content for ease of viewing on different devices. Accordingly, it is apparent that Wolff *et al.* does not disclose or suggest all claimed aspects, and therefore it is respectfully submitted that rejection of independent claims 36 should be withdrawn.

Independent claims 37 and 39-40 recite features similar to those discussed in claim 24 above. Specifically, claim 37 recites: *means for formatting data to a plurality of multi-dimensional objects based at least in part on the properties, limitations, or software plug-ins of the devices; and means for delivering the formatted data to the respective devices by mapping data path information for the delivered data to the respective devices to enable communication between the data and a Human Machine Interface (HMI); wherein the plurality of multi-dimensional objects are associated with one or more process points.* Claim 39 recites: *means for generating at least one software object by determining properties associated with the devices*

*intended for creation of the software objects; [...] and means for creating the software object that represents the Input/Output (I/O) interface with the device, wherein the software object can be displayed in two or more dimensions in accordance with requirements, properties, limitations, or software plug-ins associated with the device. Claim 40 recites: means for presenting 3-dimensional data as 2-dimensional data or vice versa based at least in part on properties, limitations, software plug-ins of the device, or any combination thereof; means for displaying data in a plurality of disparate views; and means for associating respective views with a corresponding zoom level; wherein the data includes one or more objects that represent one or more disparate systems and one or more associated disparate system components.* For reasons similar to those discussed above, Wolff *et al.* fails to suggest these and other features of claims 37 and 39-40.

Claims depending from independent claim 39 also recite nonobvious features. Claim 46 recites a system *wherein the software object represents one or more disparate systems and one or more associated disparate system components*. Claim 47 recites a system *wherein the software object represents one or more process points*, and claim 48 adds that *the software object representing one or more process points includes a process point value or quality display*. Wolff *et al.* does not disclose or otherwise render obvious these and other features recited in the rejected claims. Accordingly, the rejection of these claims should be withdrawn and the subject claims allowed.

**CONCLUSION**

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [ALBRP314US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,  
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